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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,260	10/01/2001	Veronique Zimpfer	109555	5142
25944	7590	09/28/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DO, CHAT C	
			ART UNIT	PAPER NUMBER
			2124	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/966,260

Applicant(s)

ZIMPFER ET AL.

Examiner

Chat C. Do

Art Unit

2124

*[Handwritten signature]*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/01/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations cited in claims 1 and 3 "in the other calculation stage rounding to the default integer value...to the real-number quotient" in lines 9-12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, the limitations “the scale factor” in line 7, “the remainders of the integer divisions” in lines 7-8, “the default integer value” in line 10, and “the real-number quotient” in line 11 lack antecedence basis. For examination purposes, the examiner considers these limitations as “a scale factor” in line 7, “a remainders of an integer divisions” in lines 7-8, “a default integer value” in line 10, and “a real-number quotient” in line 11 respectively. In addition, the limitations cited in the other/second calculation stage “rounding to the default integer value...to the real-number quotient” in lines 9-12 is unclear because the rounding process is to round the input number to its closest number/integer; rounding process itself would not round it a fixed default integer, otherwise it would call setting process. For examination purposes, the examiner interprets this portion of limitations as in the other/second calculation stage rounding the dividing output signal to the closest integer either round up or round down. Claims 2-3 have the same problems.

Thus, claims 4-12 are also rejected for being dependent on the rejected claims 1-

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3, 6, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

Re claim 3, the admitted prior art discloses in pages 1-2 of the present invention a calculation method for producing a recursive digital filter (0001), implemented in a signal processor working with integers, comprising a stage of calculating (using the transfer function  $F(Z)$  in page 1) the output signal of sample  $n$  based on an algebraic sum of input and output values of signals sampled at the point in time considered and at previous points in time (equation of  $y(n)$  in page 1), to which coefficients characteristic of the filter have been assigned ( $a_i$  and  $b_i$  in page 1), wherein the stage is coupled with two other calculation stages, in one calculation stage the scale factor ( $K$ ) chosen is applied to the remainders of the integer divisions, the remainders being the result of calculating the output signals of the previous samples (output of signal after going through  $1/K$ ).

Re claim 6, the admitted prior art further discloses in pages 1-2 of the recursive digital filter (lines 5-6 in page 1) produced by using the calculation (Figure 1 with feedback system and page 2 lines 1-3).

Re claim 9, the admitted prior art further discloses in pages 1-2 of the present invention an active sound protection system (lines 7-9 in page 1) using the calculation.

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Re claim 12, the admitted prior art further discloses in pages 1-2 of the present invention a negative feedback regulation system (lines 7-9 in page 1) using the recursive digital.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 4-5, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being obvious over the admitted prior art in view of Zandi et al. (U.S. 6,216,145).

Re claim 1, the admitted prior art discloses in pages 1-2 of the present invention a calculation method for producing a recursive digital filter (0001), implemented in a signal processor working with integers, comprising a stage of calculating (using the transfer function  $F(Z)$  in page 1) the output signal of sample  $n$  based on an algebraic sum of input and output values of signals sampled at the point in time considered and at previous points in time (equation of  $y(n)$  in page 1), to which coefficients characteristic of the filter have been assigned ( $a_i$  and  $b_i$  in page 1), wherein the stage is coupled with two other calculation stages, in one calculation stage the scale factor ( $K$ ) chosen is applied to the remainders of the integer divisions, the remainders being the result of calculating the output signals of the previous samples (output of signal after going through  $1/K$ ). The admitted prior art does not disclose the other calculation stage rounding to the default

integer value coming from dividing the output signal by the scale factor is replaced by rounding to the closest integer to the real-number quotient. However, Zandi et al. also disclose in Figure 6A a filter function (603) having a last calculation stage (604) to round the output result (output of 603) to the closest integer (output of round to integer box 604). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add a rounding calculation stage as seen in Zandi et al.'s invention into the admitted prior art's invention because it would enable to reduce error and provide the optimum solution.

Re claim 2, it has limitations cited in claim 1. Thus, claim 2 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 4, the admitted prior art further discloses in pages 1-2 of the present invention a digital filter (lines 5-6 in page 1) produced by using the calculation.

Re claim 5, it has limitations cited in claim 4. Thus, claim 5 is also rejected under the same rationale as cited in the rejection of rejected claim 4.

Re claim 7, the admitted prior art further discloses in pages 1-2 of the present invention an active sound protection system (lines 7-9 in page 1) using the calculation.

Re claim 8, it has limitations cited in claim 7. Thus, claim 8 is also rejected under the same rationale as cited in the rejection of rejected claim 7.

Re claim 10, the admitted prior art further discloses in pages 1-2 of the present invention a negative feedback regulation system (lines 7-9 in page 1) using the recursive digital.

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Re claim 11, it has limitations cited in claim 10. Thus, claim 11 is also rejected under the same rationale as cited in the rejection of rejected claim 10.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. U.S. Patent No. 5,694,474 to Ngo et al. disclose an adaptive filter for signal processing and method therefor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do  
Examiner  
Art Unit 2124

  
**ANIL KHATRI**  
**PRIMARY EXAMINER**



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